

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date  
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number  
**WO 2005/040393 A1**

(51) International Patent Classification<sup>7</sup>: C12P 7/42,  
13/00, C12N 1/00

(21) International Application Number:  
PCT/EP2004/011183

(22) International Filing Date: 7 October 2004 (07.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
103 47 888.4 10 October 2003 (10.10.2003) DE

(71) Applicant (for all designated States except US): DEGUSSA AG [DE/DE]; Bennigenplatz 1, 40474 Düsseldorf (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DRAUZ, Karlheinz [DE/DE]; Zur Marienruhe 13, 63579 Freigericht (DE). BUCHHOLZ, Stefan [DE/DE]; Am Wiesengrund 1, 63456 Hanau (DE). GRÖGER, Harald [DE/DE]; Akademiestrasse 31, 63450 Hanau (DE).

(74) Common Representative: DEGUSSA AG; Intellectual Property Management, Patente und Marken, Standort Hanau, Postfach 13 45, 63403 Hanau (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/040393 A1

(54) Title: PROCESS FOR PREPARING ENANTIOMER-ENRICHED ALPHA-HYDROXYCARBOXYLIC ACIDS AND AMIDES

(57) Abstract: The present invention describes an enzymatic process for preparing enantiomer-enriched  $\alpha$ -hydroxycarboxylic acids and amides which comprises, in one step, the conversion of a carbonyl compound to the corresponding acid/amides via the intermediate stage of a cyanohydrin. The invention also provides a reaction system operating in such a way and a whole-cell catalyst that is advantageous for use for this reaction.